Grazing Bites

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Victor Shelton, NRCS State Agronomist/Grazing Specialist

Does the beginning of summer change the way some plants grow?

Suddenly, it's July. We are past the summer solstice – the official start of summer. The summer solstice is best described as the longest period of daylight and the shortest night of the year. The length of the days plays an important role with some plants, because they use the length of the nights to cue the release of hormones for flowering and fruiting - photoperiodism. This topic came up recently and made me stop and think about its possible implications on forages for grazing. Let's ruminate on this a bit.

Photoperiodism basically describes what a particular species of plant does in response to changing day lengths. Plants are classified into three groups according to the photoperiods: short-day plants, long-day plants and day-neutral plants. Plants adapt to seasonal changes in their environment, but photoperiod doesn't change. Day length is pretty much the same for any particular day at the same latitude every year. The closer you get to the equator - the more balanced day and night hours are year around. Ironically, the term photoperiod is misleading because the length of the dark period is what predominantly controls plant growth, not the daylight. Temperature, moisture, growing degree days and air pressure are all very much less regular. It's interesting but shouldn't be too much of a surprise that both plants and animals use photoperiodism to adjust their activities.

Short-day plants require less than 12 hours of sunlight, or more than 12 hours of darkness. Long-day plants require greater than 12 hours of sunlight or less than 12 hours of darkness. Plants that have a flowering process that is not regulated by day length are called day-neutral plants – they bloom when they are old enough. Day length exceeds 12 hours after the spring equinox and then is less than 12 hours starting at the autumn equinox. Most plants won't grow much once daylight is under 10 hours. The summer solstice marks the end of increasing day length and the start of decreasing day length. The winter solstice, likewise, marks the end of decreasing day length and the start of increasing day length.

Indiana is long enough from north to south to have some differences in day length; remember it's about latitude. Right now, the very northern counties have about 25 more minutes of daylight than the very southern counties.

What does this have to do with grazing? Good question! It does impact annuals planted for grazing more than adapted perennials. Changes in day length indicate the season for plants. This helps them to figure out when it is time to start growing, flowering and going to seed.

Turnips, radishes, rapeseed and similar hybrids are often included in forage mixes for grazing. Though these species certainly can be included in spring seeding mixes, they do a lot better if planted after the summer solstice with increasing nighttime. The combination of increasing day length and warm temperatures usually indicates to these species to initiate bolting (flowering) and reduced forage value. It tricks some biennial plants into acting like an annual plant. Typically, these plants prefer to grow with decreasing daylight after planting, then go through a vernalization, which is a period of cold temperatures that is needed to form flowers for seed production the next spring. This is the true nature of most biennial plants.

I find it interesting that not all brassicas (cruciferous species of the Brassicaceae family, e.g. cabbage, broccoli, kale, mustard, radish, turnips, etc.) require the same vernalization or day length requirements. To complicate it, there are also some differences depending on time length to maturity within the same species. Turnips, radishes,

rapeseed and hybrids of those tend to go to seed when planted in the spring. Garden radishes would do the same if you let them go - they just don't usually reach that stage before you eat them or they may bolt more quickly if you planted them late under warmer conditions. Most of those garden radishes are very short season which helps to delay flowering if planted very early. The rest that were mentioned would be fine if all you wanted to do was add some extra diversity into a spring annual forage mix, but they rarely perform in bulk leaf or tuber/root growth as they do later in the year. These species tend to produce more forage for grazing planted post the summer solstice with increasing nighttime. If you think about how these plants or their wild counterparts would have grown naturally, most would just now be starting to drop seed from last year's plants.

Brassicas that tend to be more day length neutral and can do quite well planted in the spring include kale, some forage cabbages and collards. These usually must have a cold period in order to flower and produce seed. There are certainly subspecies and hybrids that are bred for certain growth periods or conditions, but for the most part, most prefer to grow as biennials, not annuals and the growth is reflective of that and most forage varieties are best planted for fall, winter, and perhaps next spring use.

I'll stray down a side path for a moment since this whole topic today is already a bit array. Where species won't over winter because of too cold of conditions and you want to collect seed, plants are typically collected in the fall, stored over winter and replanted the next spring to be able to collect seed from them to sustain the species or variety.

Now back to July grazing! The weather has thrown some wrenches into mowing plans to restrain runaway forage growth in a lot of the area. Some areas are still short of moisture and hopefully some timely rains will quickly come for rejuvenation them.

In June, we talked about controlling vegetation that was quickly maturing. Well, if you are like me and between lack of sufficient time and dodging raindrops, it all didn't get done. It's not too late. Benefits can still be achieved, but there are alternatives also.

If you are bound to clip, then raise the mower up just enough to only remove stems and seed heads and very little leaf matter. Mowing deeper into the stand and laying down too much material not only removes some of that solar panel, but it also covers up a good bit of it, too. It's not a bad idea to mow a couple rounds and get off and look at it closer. Are you removing enough or too much? It's best to not get into any new growth and honestly, if you have to clip, then directly behind the livestock is probably best.

If the field hasn't been grazed yet, then go ahead and graze it. Let the cows lay down a lot of that forage that they don't eat. It will still come back and that material that is laid down will provide cover and nutrients for the next growth. That cover is especially beneficial if it suddenly turns dry.

I generally don't recommend cutting it for hay at this point. Yes, it has "bulk" to it and will produce more bales, but you are baling the good with the poor material and removing nutrients no matter the quality. Haying now can slow regrowth for cool season forages this time of year. The eye should be focused more on trying to maintain quality forage for as long as possible and for future stockpiling.

I know quite a bit about plants, but there is also a lot I know I still don't know. It never hurts to keep asking why! Remember, it's not about maximizing a grazing event, but maximizing a grazing season! Keep on grazing!

Reminders & Opportunities

National Grazing Conference – December 6-9, 2021, Myrtle Beach, SC. For more information go to: https://www.grazinglands.org/grazing-conference/
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